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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,804	02/12/2004	Masud Beroz	TESSERA 3.0-236 DIV	5837
38091	7590	09/22/2004	EXAMINER	
LERNER DAVID, LITENBERG, KRUMHOLZ & MENTLIK 600 SOUTH AVENUE WEST WESTFIELD, NJ 07090			QUINTO, KEVIN V	
			ART UNIT	PAPER NUMBER
			2826	

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/777,804

Applicant(s)

BEROZ ET AL.

Examiner

Kevin Quinto

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1 and 3-7 is/are rejected.
7) ☒ Claim(s) 2 and 8 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed February 12, 2004, fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.
2. The reference, "Multi-chip Module Technologies and Alternatives, the Basics," (Doame and Franzon, eds., 1993, p.450-476) is not present in the file for United States Patent Application No. 09/802,834. The examiner kindly requests a copy of this reference.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 6 recites the limitation "said second microelectronic assembly" in line 2. There is insufficient antecedent basis for this limitation in the claim.

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6. The examiner believes that the intended term is *second microelectronic element*.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1 and 3-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Rai et al. (USPN 4,818,728).

9. In reference to claim 1, Rai et al. (USPN 4,818,728, hereinafter referred to as the "Rai" reference) discloses a similar device. Figure 1(c) of Rai illustrates a microelectronic assembly with a first microelectronic element (1) having a contact bearing face and one or more contacts (2) provided at the contact bearing face.

There is a second microelectronic element (1') juxtaposed with the first microelectronic element (1). The second microelectronic element (1') has a first surface with one or more conductive pads (2'). There are one or more conductive masses which electrically interconnect the contacts (2) of the first

microelectronic element and the conductive pads (2') of the second microelectronic element (1'). Each conductive mass includes a first region (4) comprising a first fusible material transformable from a solid to a liquid at a first melting temperature and a second region (5) comprising a second fusible material transformable from a solid to a liquid at a second melting temperature that is less than the first melting temperature (column 4, lines 16-17 and 31-32).

10. With regard to claim 3, the first region of each conductive mass includes a conductive bump (4) attached to one of the contacts (2) of the first microelectronic element (1).

11. In reference to claim 4, the second region of each conductive mass includes a layer of fusible conductive material (5) interposed between one of the conductive bumps (4) of the first microelectronic element and one of the conductive pads (2') of the second microelectronic element.

12. With regard to claim 5, the first microelectronic element (1) of Rai inherently meets the claim (column 4, lines 63-66).

13. So far as understood in claim 6, the second microelectronic element (1') of Rai inherently meets the claim ((column 4, lines 63-66).

14. Claims 1 and 3-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Ahn et al. (USPN 6,379,982 B1).

15. In reference to claim 1, Ahn et al. (USPN 6,379,982 B1, hereinafter referred to as the "Ahn" reference) discloses a similar device. Figure 12 of Ahn illustrates a microelectronic assembly with a first microelectronic element (10) having a contact bearing face and one or more contacts (20, 26, 30, 34) provided

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at the contact bearing face. There is a second microelectronic element (44) juxtaposed with the first microelectronic element. The second microelectronic element has a first surface with one or more conductive pads (48). There are one or more conductive masses which electrically interconnect the contacts (20, 26, 30, 34) of the first microelectronic element and the conductive pads (48) of the second microelectronic element. Each conductive mass includes a first region comprising a first fusible material transformable from a solid to a liquid at a first melting temperature and a second region comprising a second fusible material transformable from a solid to a liquid at a second melting temperature that is less than the first melting temperature (column 15, lines 65-67 and column 16, lines 1-7).

16. With regard to claim 3, the first region of each conductive mass includes a conductive bump (32) attached to one of the contacts (20, 26, 30, 34) of the first microelectronic element.

17. In reference to claim 4, the second region of each conductive mass includes a layer of fusible conductive material interposed between one of the conductive bumps (32) of the first microelectronic element and one of the conductive pads (48) of the second microelectronic element.

18. With regard to claim 5, the first microelectronic element (10) of Ahn inherently meets the claim (column 7, lines 63-67 and column 8, lines 1-25).

19. So far as understood in claim 6, the second microelectronic element (44) of Ahn inherently meets the claim (column 16, lines 14-21).

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20. With regard to claim 7, the first microelectronic element (10) of Ahn inherently meets the claim (column 6, lines 25-29 and column 8, lines 1-25).

Allowable Subject Matter

21. Claims 2 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. The following is a statement of reasons for the indication of allowable subject matter: the examiner is unaware of any prior art which suggests a microelectronic assembly with two microelectronic elements which are joined by flexible leads that are attached to one of the microelectronic elements by way of two fusible materials (where one fusible material is present on one microelectronic element and the other fusible material is on the other microelectronic element) one of which has a higher melting point than the other.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quinto whose telephone number is (571) 272-1920. The examiner can normally be reached on M-F 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KVQ


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